From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: dmedley@indirect.com (David Medley)
Subject: 6V6s gone
Message-ID: <199510210005.RAA13060@ns2.indirect.com>

All my metal 6V6s have been sold. I still have glass 6V6Gs (few) and plenty of 6V6GT left.
Dave KI6QE

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: n7oo@azgate.nj7p.ampr.org (Jack Taylor)
Subject: AN/TRC-80
Message-ID: <496@azgate.nj7p.ampr.org>

The AN/TRC-80 is a tropospheric scatter, radio communication facility capable of duplex transmission and reception of one voice channel and one radio teletypewriter circuit. The AN/TRC-80 is air and ground transportable and is designed for use with the Pershing Weapons System.

Frequency range: 4.4 to 5.0 gc (333 chan at 1.8 mc intervals).
Frequency separation: 100 mcs between xmtr and rcvr.
Transmitter power: 1000 watts.
Power req: 208/120 v, 400 cps, 3-phase, 4-wire.

Reference: TM 11 5820-469-10

(No I don't have the TM) 73 de Jack

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: BA/CWIST 'fest tonight?
Message-ID: <9510201623.AA18409@syseng1.se.melpar.esys.com>

Well, the 'ol 2-NT is now percolatin' with all new caps, fully cleaned up and 100% operational and looks almost mint! It's rarin' to do some 80-meter work, but I only have xtals for 3545/50/55/60/65, 3585/90/95, and 3680. Anyone up for a sked this evening?

40 is also an option, but is probably not a good choice for East Coasters after the skip sets in. I have 7010/15/20/25/29, and every 5 kHz from 7035 through 7075.

I'll be using the Drake 2-NT and a Drake R-4A, with a 140' endfed wire. Key speed or bug speed (up to 25), your choice.

73,

Paul, K4MSG

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: bill@texan.frco.com (William Hawkins)
Subject: Big dummy load
Message-ID: <9510192154.AA08031@texan.frco.com>

With reference to the Emergency Repair thread and the use of a foot-long hose full of salt water to make a resistor, has anybody tried to make a dummy load that way? How about a flow-thru model, using two 3 inch long pieces of 1/2 inch copper pipe as terminals, with some inches of plastic hose between them to get 50 ohms. The other ends of the copper pipes would connect to plastic pipe and a pump such that the electrolyte will circulate through the resistor. Then you could use a radiator to get rid of the heat. An automobile radiator ought to be able to handle 50 kilowatts with a good fan. (Just in case you happened on an old 50 KW transmitter.)

The problem would be the electrolyte. I don't think salt water will get down to 50 ohms with a reasonable separation between terminals. Anything stronger would be too corrosive for copper, so you might need stainless steel for terminals, pump, and radiator.

Sure would be non-inductive, though.

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: bill.sorsby@dlep1.itg.ti.com (Bill Sorsby)
Subject: Re: Blooming Tektronix Scopes
Message-ID: <199510192205.RAA02455@dlep1.itg.ti.com>

>
>Interesting. I didn't know you could get a Tek hv transformer from Fair
>Radio. I am not sure Tek ever made any that will not develop this problem.
>It could be that all the scopes that used it went out of production before
>the problem showed up which means they never would have made long term good

>ones. I will check the microfiche on this subject and also check with a
>contact I have inside Tek. The safest thing to do is remove the bad one and
>have it rebuilt by Bill Schell, AA4AY. It will cost you about $50 but it
>will be $50 well spent. Get a quote directly from him to make sure of the
>real price. I can provide address and phne number for Bill Schell if you
>need it.
>
>Stan W7NI@teleport.com
>
>

I think I need that address. Let me make sure I understand what you're saying before I go off and rebuild the transformer, though. The problem was that the dielectric used in the H.V. transformer was lossy, causing heat generation which reduced efficiency in the transformer which in turn meant that the core saturated before the output voltage regulated. Hence, reusing the "core" from an existing transformer will not cause the same problem to remanifest itself again. (i.e., the problem is not caused by the core, although the core could have been designed so that the problem would not have occurred. Correct??)

Two other notes: 1.) Fair provides complete H.V. supplies for the 530/540 series scopes for $35 (Hank pointed this out to me.) and 2.)disregard my prior post about the 549 (you just answered it). I posted it before receiving your last one.

Regards,
Bill, N5BU

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: Henry van Cleef <vancleef@bga.com>
Subject: Re: Blooming Tektronix Scopes
Message-ID: <199510192328.SAA28874@zoom.bga.com>

As Bill Sorsby said
>
>
> >
> >Interesting. I didn't know you could get a Tek hv transformer from Fair
> >Radio. I am not sure Tek ever made any that will not develop this problem.
> >It could be that all the scopes that used it went out of production before
> >the problem showed up which means they never would have made long term good
> >ones. I will check the microfiche on this subject and also check with a
> >contact I have inside Tek. The safest thing to do is remove the bad one and
> >have it rebuilt by Bill Schell, AA4AY. It will cost you about $50 but it

> >will be $50 well spent. Get a quote directly from him to make sure of the
> >real price. I can provide address and phne number for Bill Schell if you
> >need it.
> >
Yes, Fair is selling Tektronix stuff---power transformers, HV power
supplies, and CRT's. I would assume that all this is "used, condition
unknown," though Fair is well-known as a perfectly good dealer. It
could be "NOS military spares" inventory. You'd have to check with
them. One "watch outfer": military spares were not necessarily
Tektronix-built. One other tidbit is that the Hickock 545 "wannabe"
scope I have uses a different transformer, in a Mil-T-27 sealed
packages. Voltages are the same, but you're on your own getting one
mounted and working (if it actually will) in a Tek scope. The Hickock
scopes look like copies of the Tek 545A, but there are plenty of
differences inside.
>
> I think I need that address. Let me make sure I understand what you're
> saying before I go off and rebuild the transformer, though. The problem was
> that the dielectric used in the H.V. transformer was lossy, causing heat
> generation which reduced efficiency in the transformer which in turn meant
> that the core saturated before the output voltage regulated. Hence, reusing
> the "core" from an existing transformer will not cause the same problem to
> remanifest itself again. (i.e., the problem is not caused by the core,
> although the core could have been designed so that the problem would not
> have occurred. Correct??)

Not quite, from my perspective. The problem is that the insulation on
the bobbin breaks down. You can salvage the old core (a powdered iron
job) and use it on a new bobbin. That, by the way, is the case with
any transformer. You can salvage the core or laminations; the part
that gets in trouble is the bobbin. If you need a transformer, and
Bill Schell rewinds them for $50, that's probably the "way to go."
>
> Two other notes: 1.) Fair provides complete H.V. supplies for the 530/540
> series scopes for $35 (Hank pointed this out to me.) and 2.)disregard my
> prior post about the 549 (you just answered it). I posted it before
> receiving your last one.
>
>
> Regards,
> Bill, N5BU
>
>

--
****
Hank van Cleef vancleef@bga.com vancleef@tmn.com

****

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: bill.sorsby@dlep1.itg.ti.com (Bill Sorsby)
Subject: Re: Blooming Tektronix Scopes
Message-ID: <199510200623.BAA14967@dlep1.itg.ti.com>

Well, Henry, Stan, I dug into the 547 this evening and could find no leaky caps, so I guess the next step is replacing the H.V. transformer. Since I hate the prospect of not having the 547 available for use, I guess I'll order one of Fair Radio's H.V. supplies, replace either the transformer or the entire supply in my 547 and then send off the old transformer to be rewound, if necessary.

>Yes, Fair is selling Tektronix stuff---power transformers, HV power
>supplies, and CRT's. I would assume that all this is "used, condition
>unknown," though Fair is well-known as a perfectly good dealer. It
>could be "NOS military spares" inventory. You'd have to check with
>them. One "watch outfer": military spares were not necessarily
>Tektronix-built. One other tidbit is that the Hickock 545 "wannabe"
>scope I have uses a different transformer, in a Mil-T-27 sealed
>packages. Voltages are the same, but you're on your own getting one
>mounted and working (if it actually will) in a Tek scope. The Hickock
>scopes look like copies of the Tek 545A, but there are plenty of
>differences inside.

I'd thought there would be similarity between the 547 and 549 but, surprise, their H.V. supplies aren't even close. I'm looking at the 549 now and it doesn't even have the +8150 volt supply! Totally different arrangement - because of the analog storage capability I suppose. And, the rectifiers are solid state. Plus, it's new (relatively). Component date codes indicate 1969 manufacture - solid-state era ya know. (Yeah right.) So... I suppose this means that I'll have to troubleshoot this beast, differently. BTW, guess what? The H.V. transformer in the 549 one is potted.

Got any different advice for this one?

Regards,
Bill, N5BU

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: bsn@fusion.ph.utexas.edu

Subject: Book: Inductance Calculations
Message-ID: <199510201739.MAA16264@uro.theporch.com>

While browsing at the local used booksellers, ran across copy of Inductance Calculations Working Formulas and Tables by Grover. I have a copy or would have grabbed it myself. This is the hardbound edition reprinted by the Instrument Society of America. They want $12.98 and we have 8.25% sales tax. A padded mailer and book rate shipping probably looks like another few bucks.

Now for the anal retentive law student stuff (don't be misled by the "fusion" in the address, that was a prior incarnation):

The book looks to be in good shape, but I haven't and won't inspect it page by page. I don't have the time. If anyone is interested, reply to my e-mail address, so we don't clutter up the listserver. If more than one person expresses an interest, the earliest date/time stamp in the header gets it. Of course, by the time I go back to the book store, there is the possibility it will be gone. I am not making any promises nor am I offering to sell my copy.

With that, regards,
Barry W5KH

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: w7ni@teleport.com (Stan Griffiths)
Subject: Brine Loads
Message-ID: <199510210221.TAA28341@desiree.teleport.com>

I know very little about this subject but I remember calling on the MIT Linear Accelerator Facility years ago and one of the engineers there showed me a plastic garbage can that he said was used as a dummy load for the klystron amplifiers (at least I think they were klystrons, anyway, they were several KW and vhf or uhf). The garbage cans were filled with water and regular NaCl was sprinkled into it until the right impedance was obtained. Water evaporated and had to be added every so often. I don't know what material was used as electrodes immersed in the salt water to make electrical connection to it. It always seemed like a great way to make a big and cheap dummy load but I never had occasion to try it out. I always use a 1/2 wave copper wire dummy load, center feed it with 50 ohm coax, and "air cool" it.

Stan W7NI@teleport.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "Terry O'Laughlin, RM:7135, #:6-6667" <OLAUGHLIN@vilas.uwex.edu>
Subject: Collins O-937 tube synthesizer
Message-ID: <MAILQUEUE-101.951020134809.768@vilas.uwex.edu>

I pulled the Collins O-937/TRC-80 frequency synthesizer out of the pile and fired it up. The contract no. is 4255-PP-61. It a beautifully built beast about the height of an R-390 but only one half as deep. I wasn't able to determine the frequency range because one of the oscillators is dead.

The O-937 has five modules; three oscillators and two mixers. The power supply and metering circuits occupy the bottom third of the chassis and the five modules are arrayed across the top two thirds. Each of the five modules is about 3" wide, 5" high and 6" deep.

The three oscillators have one rotary dial each, labelled "channel" and selecting 0-9 for either "100s", "10s" or "units." The hundreds oscillator is dead. The 10s oscillator covers 2.325-3.4375 mHz in 125kHz steps. The unit oscillator covers 0.325-0.4375 mHz in 12.5 kHz steps. The first mixer combines the 10s and the units oscillators. The second mixer combines the first mixer and the 100s oscillator.

All of the oscillators and mixers have individual AGC circuits. You change frequency by setting the three channel selector controls and peaking the two mixer tune controls. The mixer tune controls are labelled to avoid tuning them to the wrong mixer product. Inside, the mixers have the familiar Collins cam and slug rack tuning mechanism. Each mixer has five slugs.

The tube lineup is straightforward, all nine pin:

osc 1 - 5654
osc 2 - 5654 (2)
osc 3 - 5670 (2)
mixer 1 - 5670 (3)
mixer 2 - 5670 (2), 6922

The unit fires up really nice. The filaments and ovens come on immediately. The B+ is time delayed by about 90 seconds. A delay indicator is provided. A meter and switch can measure the AGCs and outputs in each of the five modules.

I'm really curious to find out what the frequency range of this unit is. Is anyone familiar with it or the TRC-80? I don't suppose that anyone has a schematic or a manual.

73 Terry O' WB9GVB

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: David Stinson <72227.1640@compuserve.com>
Subject: EGADS! Radioman, Spare that Fiver!
Message-ID: <951020085536_72227.1640_EHM52-7@CompuServe.COM>

Ye Gods! Giving away Command Sets? ARC-5's not being sold at hamfests?
I'm *always* interested in hearing about ARC-5 type gear you have available.
I may not want to pay a big price for a common set or a parter, but I'm always
looking and will pay well for good sets.
Note: Anything with the power connectors removed or the chassis drilled
(except the receiver plug-in on the front) is a parter in my book.

I administer the sorta-kinda-offical orphan's home for the poor, lost, unloved
old Command Sets. Have a heart. If you can't sell them at the fest,
give me a shot and perhaps we can help them rejoin their kinfolks in
my collection. That would be a good mark for you in the books upstairs.

73 DE Dave AB5S7
72227.1640@compuserve.com

p.s. collins hammerlund hallicrafters drake johnson

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: Scott_Johnson-AZAX60@email.sps.mot.com
Subject: EICO test equipment FS
Message-ID: <"Macintosh */PRMD=MOT/ADMD=MOT/C=US/"@MHS>

EICO test equipment FS
I have a large number of EICO pieces I need to part with to make room.

These are all tube type pieces, including a 460 'scope, sig gens, audio gens,
marker and sweep gens, and a VTVM. I would like to sell it as a lot to someone
who is in to EICO, as it represents a good share of their product line from the
early sixties. I will be entertaining offers until the 27th, at that time I
will chose the best story/offer. If you need more info, I can be reached at
(602) 413-3302 (days, MST)

Scott

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "R. Dennis Gibbs" <dgibbs@rational.com>
Subject: Electric Radio, October issue?
Message-ID: <Chameleon.4.01.951020161228.dgibbs@>

Greetings all,

Has anyone on the East Coast received their October issue of Electric Radio yet?

Dennis
dgibbs@rational.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: Gary Gitzen <garyg@cup.hp.com>
Subject: filter cap availability?
Message-ID: <199510201634.AA190436843@hpuxsvr.cup.hp.com>

Hi All,

A friend asked me to give his aging Fender guitar amp a checkup. It looks like the first filter cap has been leaking, and should be replaced.

I haven't bought a 450V electrolytic in probably 15 years. Can anyone give me some clues as to the availability of 16mfd 450V filter caps? I'd like to find at least one, and possibly up to three of them. Anything between 16-30mfd should do fine. Any pointers on costs?

Thanks for any help.

Gary

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: john@jkhome.network23.com (John King)
Subject: Re: Firebottle Synthesizers
Message-ID: <9510200944.AA02782@jkhome.network23.com>

> I missed the origins of the thread on firebottle synthesizers, but here's my 2 cent's worth:

The first ham rig to use a synthesizer did indeed use tubes and was designed and built in the US of A in the early sixties. The B&W 6100 transmitter used a very clever hollow state synthesizer design that was originally published in QST in January, 1958 by Herman Shall, W3BWK (now a SK.) Shall called his synthesizer the Crystalplexer; his article is titled "VXO, A Variable Crystal Oscillator." The B&W 6100 was written up in Electric Radio, March 1995. The 6100 would be a worthwhile addition to any BA collection but they're fairly rare; only 200 were made.

73,
John King WA1ABI

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "James T Hanlon" <JTHANLO@sandia.gov>
Subject: Free Audio Amplifiers

Y'all,

A friend of mine in Albuquerque would like to give away two racks full of audio amplifier (one per rack) that came out of a drive in theatre. Bring your pickup. He says they would make a good modulator or something to scare the kids with at Haloween.

Get in touch with Mike Langner at

76434.34@compuserve.com

He describes the amps as follows:

"Thanks for the holler back... the amplifiers are each a pair of 811A's drivin by 6B4's... it appears to run class "B" or at the very least "AB-2"... I say this because the cathode current meter shows low idling current as the norm with substantial increases expected with operation.
There are two identical units, rack mounted, grey crackle finish, seeming to be in good condition missing only the output xfrmrs... I'm told the amps came from a drive-in theater in Santa Fe, and that defective output transformers were the typical failure mode since teen-agers had taken to shorting speaker leads as a form
of creative vandalism!
The inputs are, as I remember, 6SJ7 driving a 6SN7 -- the amps should
have air power sensitivity.

The amplifiers and the power supplies are separate units mounted immediately adjacent to each other in the rack. Overall visual condition is excellent except for the one missing output transformer.
The tubes were removed, but are available to whoever wants the units
as part of the "free to a good home" deal.
Thanks, Jim, and I hope you can find them a good home. I've also listed them with Brian for posting on the swap net...
73!
Mike/"

and 73 too from Jim, W8KGI

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: FS list: New version available
Message-ID: <9510201512.AA16908@syseng1.se.melpar.esys.com>

To those who requested a copy yesterday: I have slightly modified it by halving the price of the 6146, since I'm not 100% certain it's new. Also, A KVG XF-9E filter has been added.

73,

Paul, K4MSG

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "William C. Robbins" <billrobb@serv01.net-link.net>
Subject: Hallicrafters FS
Message-ID: <199510192210.SAA18559@serv01.net-link.net>

I have a pair of Hallicrafters Civic Patrol receivers...the S94 and S95. They are in excellant shape. $85 for the pair.

Bill.

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: scott@hpislst.lvld.hp.com
Subject: Re: Hamfest in Golden...
Message-ID: <199510201552.AA283444373@hp.com>

Dale writes:

> Hey Folks!
>
> According to the URL, http://www.rmsd.com/hamradio/misc.html,
> there's going to be a hamfest THIS Sunday, at the Jefferson County
> Fairgrounds in Golden, Colorado, sponsored by The Rocky Mountain
> Radio League. Anyway, has anyone on this list been to this event
> before? Is it worth my 1.5 hour trek down there?

Thought I'd respond to the list as well as directly to Dale, 'cause it gives me a chance to whine a bit :-)

Hamfests in this part of the world just don't have the wealth of BA equipment that our neighbors nearer to the coasts seem to report. A typical 'fest here *MAY* have one or two bona fide BA's, and a smattering of later tube sideband rigs. A couple of guys'll bring down some test equipment, some of it BA in nature, and several oldtimers will get tables with some of their junkbox parts on them that occasionally produces a treasure, and that's about it. Oh, and tailgating is almost unheard of around here. I almost cry every time I see hamfest reports from the coasts with long lists of true boatanchors for sale.

Oh well. That said, I'll still be at the Jeffco 'fest bright and early Sunday morning. Every once in a while something good *does* show up and I don't want to miss it if it does. And it gives me a chance to run into a few old and a few new friends.

One final word of warning about this particular event. Unless things have changed (this 'fest was cancelled last year so improvements may have been made) the Jeffco facilities aren't the best. There isn't much room, so things tend to be pretty crowded. The line to get in is usually long and slow-moving and once you're in it's a bit claustrophobic. Be prepared.

End of whine.

Scott Turner KG0MR scott@lvld.hp.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "William C. Robbins" <billrobb@serv01.net-link.net>
Subject: Heath Gear FS
Message-ID: <199510192203.SAA18506@serv01.net-link.net>

I Have the following Heathkit Duplicates to sell or trade. Let me know what

goodies you may have.

        HD-10 Keyer
        DX-60 Transmitter
        B-1 Balun Box
        VX-1 Vox Unit
        CA-1 Conelrad Unit
        GD-1B Grid Dip Meter
        AM-2 SWR Bridge
        HM-15 SWR Meter
`   HD-20 100khz Calibrator
        PM-2 RF Power Meter
        Sixer

Bill WA8CDU

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "Colin Schmutter" <cschmutter@bcit.bc.ca>
Subject: How to clean a copper chassis?
Message-ID: <199510202148.OAA05716@mozart.bcit.bc.ca>

Would anyone have any tips regarding the removal of oxides and grime on a
copper chassis such as the older Drake rigs

Also would anyone know if the older Drakes were solid copper or
copper plated?

Thanks,

Colin

Colin Schmutter
Networks and Communications
British Columbia Institute Technology
CSCHMUTTER@BCIT.BC.CA

(604) 432-8858

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: howellh@acad.winthrop.edu
Subject: HQ 110
Message-ID: <95101922182301@acad.winthrop.edu>

WINTHROP UNIVERSITY   Electronic Mail Message

Date: 19-Oct-1995 10:16pm EDT
From: Haney Howell
HOWELLH
Dept: Mass Communication
Tel No: 323-4534

TO: Remote Addressee (_smtp%"boatanchors@theporch.com")

Subject: HQ 110

Thanks, folks. The basic problem was simple. The AVC must be off. Think I could rebuild this rig with the advice I received today! Still needs tweaking but does play fairly well. Want to lash it up to the Amico for some 6 meter AM action!

Haney no2n howellh@winthrop.edu

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: BHall88620@aol.com
Subject: Introduction
Message-ID: <951020092719_49500540@emout06.mail.aol.com>

Dear Folks:

On the suggestion of Hank, I thought I would introduce myself. Doing this earlier sort of slipped my mind; please excuse my poor manners.

I am a 22 year old engineer with a degree in Mechanical Engineering from the University of Connecticut. I graduated in May, and have been living in Alabama since I graduated. (Poor economics times in CT forced me to move south)

I do have some background in electronics, but tube electronics is new to me. I have a few books on tube theory, and hope to have a working knowledge of tube circuits fairly soon.

My interest in tube equipment and boatanchors comes to me through my grandfather, who before he retired worked as a machinist, radio repairman, TV repairman, and Master System Anntenna specialist. He has quite a collection of neat stuff that he likes to show and about whenever I visit. I think that is what got me hooked on tube equipment.

I currently have two peices of BA gear, a much beloved Halli SX-24 (which is playing much better now that I have a speaker matching transformer in it) and a Heathkit 0-9 Oscilloscope. Currently, I am on the hunt for more BA and interesting tube gear, because the SX-24 keeps crying out for me to get it

some company. So far, I am not having much luck here in North Alabama finding such gear.

I plan sometime soon to rebuild the 0-9, but it is going to have to wait until I have the time to do the proper ground-up rebuild. The SX-24 was recapped by grandpa about 8 years ago, and works well. I might someday do a ground up rebuild on it, but only time will tell that.

Well, that is about. Just like to send my thanks out to y'all for all your help so far, and for putting up with my silly "is this set running too hot and do I need a transformer" questions.

Sincerely,
73,
Ben

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "Cal J. Eustaquio" <ceustaqu@violin.aix.calpoly.edu>
Subject: Re: Introduction
Message-ID: <Pine.A32.3.91.951020072919.184083D@violin.aix.calpoly.edu>

Ben:

I'm 11 years older than you and seems that our paths are somewhat parallel! I will be graduating from Cal Poly State University sometime next year this time. I was lucky enough to have learned hollow-state technology from Uncle Sam when I was in the Navy (yes, back in the '80's we were still using R-1051's and R-390's onboard my ship, the USS Badger, FF-1071). Well, good luck. I'm having fun with my BA's here. Keep in touch. Cal, N6KYR. EE/English major.

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: w7ni@teleport.com (Stan Griffiths)
Subject: Re: Introduction
Message-ID: <199510210220.TAA28190@desiree.teleport.com>

On Oct 20, Ben said:

>Dear Folks:
>
>On the suggestion of Hank, I thought I would introduce myself.
>I am a 22 year old engineer with a degree in Mechanical Engineering from the
>University of Connecticut.
>I do have some background in electronics, but tube electronics is new to me.
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>a Heathkit 0-9 Oscilloscope. Currently, I am on the hunt for more BA and
>interesting tube gear, because the SX-24 keeps crying out for me to get it
>some company. So far, I am not having much luck here in North Alabama
>finding such gear.
>
>Sincerely,
>73,
>Ben

Hi Ben,

I don't know if the "Hank" that you are talking about is Hank van Cleef or not but Hank van Cleef hangs around here on the BA network and is very helpful when it comes to hints and kinks on how to proceed with a BA rework.

If you want to become "tube literate" I would like to suggest that a good way to do it is to get a Tek scope of the late '50s or early '60s vintage and rebuild it. There are a lot of good reasons why this is a good idea.

1. They are loaded with tubes and you will know a lot about tubes when you are finished with this project.

2. They are cheap and easy to find in most fleamarkets.

3. If you get one of the more common models, like a 545, 545A, 535, etc, etc, every part is available from parts units. I can supply virtually any part you may need.

4. You have at least two willing experts to help you through the project: Hank van Cleef and myself.

5. You have my book, "OSCILLOSCOPES--Selecting and Restoring a Classic" to help you decide which models of Tek scopes to stay away from and which ones are good. I also make recommendations on how much you should expect to pay. My book is available directly from me for $19.95 postpaid. If you are interested, I will pass you my address.

6. Manuals and copies of manuals are readily available.

7. Most important, when you get done restoring one of these elegant pieces of equipment, you will have a very valuable tool to use to help you restore every other BA you get in the future.

Feel free to ask my advice regarding early Tek instruments anytime.

Stan W7NI@teleport.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: Richard E Robinson <rerobins@uncc.edu>
Subject: Knurl nut wrenches
Message-ID: <199510201456.KAA19805@unccsun.uncc.edu>

The 1991 GC electronics catalog list 2 knurl-nut wrenches for those pesky nuts on switches. One is 1/2" in diameter, Cat. No. 9358, and one is 5/8" in diameter, Cat. No. 9359. Both are a collet type with 1/16" of adjustment for slightly larger and smaller sizes.

Sorry but I don't have a price or current availability.

Rick kf4ar

P.S. Sorry I lost your address Phil.

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: Bill VanAlstyne <bill@cruz.com>
Subject: Re: Marconi history
Message-ID: <199510201924.AA19678@cruz.com>

At 12:28 PM 10/20/95 -0500, Jim Haynes forwarded:
>>On October 17, CBC Newsworld carried a story about the Mayor of Saint
>>John's, Newfoundland, being upset concerning claims that Nova Scotia is
>>misrepresenting the historical facts about Marconi's first trans-Atlantic
>>radio transmission.
>>
>>The Mayor said he would write a letter to Premier John Savage of Nova
>>Scotia about the attempt by Nova Scotia's Tourism Department to claim that
>>Marconi's feat took place in Cape Breton.
>>
>>Here are the facts... [snip..]

These facts are quite accurate -- at least, they agree with all my own literary sources. It is interesting that there should be any perception that Nova Scotia is trying to distort what is clearly historically documented and, by all accounts, long since non-controversial. I've certainly never perceived any such attempt at historical revisionism in the centennial activities going on in Nova Scotia or in their promotional and historical material available on the Internet.

It is interesting, however, to take note of something that is perhaps not

common knowledge amongst radio history students in the United States, and that is the fact that Newfoundland was, in 1901, *not* a part of Canada. Here is a brief history of the island, excerpted from The Concise Columbia Encyclopedia, (c) 1992 Microsoft Corp.:

>In 1763 the treaty of Paris definitely awarded Newfoundland and Labrador to
>Britain. Representative government was introduced in 1832 and parliamentary
>government in 1855. Voters rejected union with Canada in 1869, and further
>negotiations for union, begun in 1895, were unsuccessful... During the
>depression of the 1930s Britain suspended Newfoundland's self-government, and
>actual authority was exercised by a joint commission of Newfoundlanders and
>British. In 1949 Newfoundland became Canada's 10th province...

It seems clear from the above that there was likely a very competitive, non-cooperating posture being taken by Newfoudland and Nova Scotia at the turn of the century, perhaps (or perhaps not) having to do with fishing and fishing rights. It is fascinating, at any rate, to find evidence that even today there may be some hard feelings between Newfoundlanders and other Canadians! Any comments from our Canadian BA subscribers would be germane, needless to say.

In any case, it is also worthy of note that the only reason Marconi ended up in Newfoundland/Canada in the first place was because his poorly-designed antenna system at Cape Cod (in the US) blew down in a gale at a most inopportune moment, and he didn't feel there was time to reconstruct it. (Had to hit that public relations window first!) Knowing he would need to use temporary and vastly inferior antennas, he chose Newfoundland for the first transatlantic test because it was as close as he could get to Poldhu and still be in North America.

In such twisted ways do the fates play with what we call history!

Bill VanAlstyne, N6FN
bill@cruz.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: haynes@cats.ucsc.edu (Jim Haynes)
Subject: Marconi history, from another mailing list
Message-ID: <199510201725.KAA25803@hobbes.UCSC.EDU>

>From rustfrog@fox.nstn.ca Fri Oct 20 03:21:46 1995
>Date: Fri, 20 Oct 1995 06:21:46 -0400
>Reply-To: rustfrog@fox.nstn.ca
>Sender: History of Technology Discussion <HTECH-L@SIVM.BITNET>
>From: Ivan Smith <rustfrog@fox.nstn.ca>
>Subject: Mayor St. John's vs. Premier Savage

>To: Multiple recipients of list HTECH-L <HTECH-L@SIVM.BITNET>
>
>On October 17, CBC Newsworld carried a story about the Mayor of Saint
>John's, Newfoundland, being upset concerning claims that Nova Scotia is
>misrepresenting the historical facts about Marconi's first trans-Atlantic
>radio transmission.
>
>The Mayor said he would write a letter to Premier John Savage of Nova
>Scotia about the attempt by Nova Scotia's Tourism Department to claim that
>Marconi's feat took place in Cape Breton.
>
>Here are the facts:
>
>Several milestones in radio communications were achieved by Marconi in
>Atlantic Canada. (In this context, "radio" is synonymous with "wireless
>telegraphy", as distinct from commercial broadcasting of music and spoken
>material which came on the scene about two decades later.)
>
>There were four principal stages in the development of radio communications
>that involve Atlantic Canada.
>
>(1) The first radio signals were transmitted across the Atlantic Ocean
>from Marconi's station in Poldhu, Cornwall, in the far west of England, and
>were received by Marconi on Signal Hill, at Saint John's, Newfoundland on
>December 12, 1901. The radio signal consisted of the letter "s", three
>dots in Morse code, transmitted repeatedly from Poldhu. The photographs
>referred to by the Mayor, as proving that Marconi received the first
>trans-Atlantic radio signal at Saint John's, were taken during this
>successful experiment. Marconi might have built a permanent station in
>Newfoundland, but the Anglo-American Telegraph Company, which operated
>several lucrative undersea cables between Europe and North America, had
>a monopoly on telegraphic communications in Newfoundland, and threatened
>legal action if these radio experiments continued, forcing Marconi to stop
>work there.
>
>(2) Having been driven out of Newfoundland, Marconi arrived in Cape Breton
>where he received a warm welcome. He built a radio station in Glace Bay,
>Nova Scotia, on Table Head in 1902. This station was designed for sending
>and receiving trans-Atlantic radio messages. The first official radio
>messages were transmitted from here to Poldhu, Cornwall, on December 15,
>1902. The Marconi National Historic Site, with an interpretative center
>operated by Parks Canada, is at this site.
>
>(3) Further experiments showed that radio communications between
>Glace Bay and Poldhu were not reliable enough for a commercial service.
>Consequently, Marconi dismantled the Table Head station in the winter of
>1904-05 and built a more powerful one on a larger site just south of Glace
>Bay, now known as Marconi Towers. He also built a new station at Clifden,

>Ireland, and the first commercial trans-Atlantic radio communications
>service began between these stations in October, 1907. Commercial
>operations continued here until 1945.
>
>(4) In 1913, Marconi built separate receiving stations at Louisbourg,
>Nova Scotia, and at Letterfrack, Ireland. These were far enough from the
>transmitters to allow the transmitters and receivers to be operated at the
>same time, and messages to be sent in both directions across the Atlantic
>simultaneously. This simultaneous two-way service was called a "duplex"
>service. It remained in operation until 1926, when it was replaced by a
>more modern short wave radio service between London and Montreal.
>
>This information should help to sort out the claims of Newfoundland and
>Nova Scotia regarding Marconi. Both provinces should be proud of their
>roles in radio history, and both have interesting stories to tell the
>public.
>
>Incidentally, the house that Marconi lived in and the remains of the
>transmitter building still stand at Marconi Towers, and are the last
>structural remnants of the trans-Atlantic stations in the world today.
>The Marconi Towers Foundation, with headquarters in Cape Breton, is
>dedicated to the preservation of this site and its conversion into a
>museum.
>   ------------------------
>
>   Marconi and Radio; 1901 to The Present
>
>   Principal Events, Especially the Cape Breton Connection
>
>1901, Dec 12   Marconi receives the first trans-Atlantic radio signals
>   at Saint John's, Newfoundland. These were test signals
>   consisting of a single letter; transmission of messages
>   came later.
>
>1902, Dec 15   The first trans-Atlantic wireless telegraph messages are
>   transmitted from his new station at Table Head, Glace Bay,
>   Nova Scotia, to Poldhu, Cornwall, England.
>   (The "wireless" part is the vital distinction here;
>   electric telegraph messages had been transmitted across
>   the Atlantic by undersea cable since 1866.)
>
>Circa 1904   Ship/shore stations are built along the Atlantic Coast
>   and shores of the St. Lawrence River; radio equipment
>   is manufactured in Glace Bay; Canadian Marconi Company
>   is founded.
>
>1904-05   Larger trans-Atlantic stations are built at Marconi Towers,
>   near Glace Bay in Cape Breton, and at Clifden, Ireland.

>
>1907, October Commercial 24-hour wireless telegraph service begins
>   between Marconi Towers and Clifden.
>
>1909   Marconi shares Nobel Prize in Physics with Braun
>   of Germany for work in radio.
>
>1913   The trans-Atlantic service becomes a duplex (simultaneous
>   two-way) service with the opening of receiving stations at
>   Louisbourg, Nova Scotia, and Letterfrack, Ireland.
>
>1914-18   World War I accelerates the development of DeForest's triode
>   vacuum tube, revolutionizing radio.
>
>1919   First east-to-west trans-Atlantic voice transmission from
>   Ballybunion, Ireland, to Louisbourg, Nova Scotia.
>
>1919   The Canadian Marconi Station XWA (later CFCF) goes on the
>   air as the first licensed radio broadcasting station in
>   North America.
>
>1920   Marconi station begins radio broadcasting in England;
>   later becomes BBC.
>
>1926   Short-wave trans-Atlantic radio service begins between
>   stations near London and Montreal; long wave service
>   involving Cape Breton stations closes; Louisbourg station
>   is dismantled; Marconi Towers continues ship/shore service.
>
>Late 1920s   Marconi spans the world with radio via his British Empire
>   short wave service.
>
>1937, July 20 Marconi dies in Rome, Italy.
>
>1945   The Marconi Towers station (VAS) is closed and is sold to
>   Russell Cunningham. The manager's residence and part of
>   transmitter building remain today.
>
>1930-present   Further developments of radio include television
>   broadcasting, radio navigation and radar, mobile wireless
>   communications, microwave networks, satellite and space
>   communications.
>
>The Future   Worldwide communications network of satellites and optical
>   fibre cable, accessible from anywhere on Earth by wire or
>   wireless.
>   ------------------------
>

>--
>   ***   Ivan Smith,   Rusty Frog Videos
>   ***   PO Box 121, Canning, Nova Scotia, Canada   B0P 1H0
>   ***   E-mail: rustfrog@fox.nstn.ca
>   ***   Tel 902-582-3783
>

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: jmz@monolith.cis.net
Subject: more on dummy loads
Message-ID: <9510202226.AA26484@monolith.cis.net>

 With all this discussion of dummy loads,I seem to remember the light bulb being a favorite-and of ham magazines discouraging this due to RF leakage.
 Being the owner of a two-kW CCS Bird Thruline,I'm pretty well fixed for RF loads but do need low frequency loads at such impedances as 4,8,or 16 ohms.Light bulbs would seem ideal except that they are very nonlinear-a cold bulb's resistance is roughly a tenth of what it is at design current and temperature.
 The old carbon filament bulbs had the inverse relationship.My question-are carbon filament bulbs made for any purpose whatever anymore?
 Aside from replica Edison light bulbs,which are not cost effective.

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "Integration Area" <integrat@usr.com>
Subject: Navy RAE-2
Message-ID: <9509208142.AA814237560@robogate.usr.com>

Does anyone know anything about a pre WW2 Navy receiver called RAE-2?

Some time ago I picked up a CRV-50008 Combiner. It looks like it is some kind of mixer. It is a fairly large rack mount chassis, so I figure the entire system must have fit in a tall rack. It has sockets for nine CRC-38027s (the prewar Navy code for type 27 tubes. If anyone has any of these, I would be interested), and quite a few transformers. The outputs from three receivers can be combined in this unit. The power is supplied externally, perhaps from another chassis.

I have only very little information, and most of it is 2nd hand. Was it a diversity setup? My information mentions a tone keyer. Any ideas? Any manuals/pictures/schematics/stories/parts/diagrams floating around out there?

William Donzelli

integrat@usr.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "Tom Taylor" <tom_taylor@taligent.com>
Subject: Need Drake TR-3 Advice
Message-ID: <n1397977238.19767@taligent.com>

The TR-3 I've been resuscitating the last few months is limping along. I've made CW, SSB, and AM QSO's with the radio.

Problems remaining:

- still can't track down the source of crackle in the audio (crackle is independent of the receiver gain control). The crackling still occurs even when I disconnect the audio input to the audio amp. I've rebuilt the homebrew power supply with new capacitors (and fixed the bias supply so that it works correctly). I've replaced the power resistors used to drop the plate voltage of the audio amp tube (among others). I've replaced all of the disc caps in the audio section. I've replaced the audio amp's cathode resistor. I've disconnected the internal multisection capacitor used in the medium voltage supply and externally clipped in new capacitors. All of this has had no effect on the crackling noise. I'm stumped. Could the audio output transformer be the culprit?

- depending upon the band and the position of the sideband switch, rf power output is significantly lower in one of the positions. For example, on 40 meters, the sideband switch is on the "X" mark for LSB. Good LSB power output on 40. On 15 meters, however, the sideband switch is not in the "X" position for USB. Low power output on 15 on USB. Switching to LSB, good power output on 15. I went through the alignment procedure again regarding adjustment of the balanced modulator output transformer, the filter matching transformers, and the carrier balance adjustments. Still, lower power output on one sideband.

- carrier shift in CW mode is 1500 cycles, rather than 1000 cycles. Those extra 500 cycles are enough to make it nearly impossible to carry on a cw QSO without readjusting the main tuning at every changeover (the TR-3 has no RIT). According to the manual, when the mode switch is placed in the X-CW position, the 9.0 Mc oscillator is shifted to 9.001 Mc (mine's shifted to 9.0015). I've got a pretty poor photocopy of the schematic (I'm looking for an excuse) and I can't figure out how the 9.0 Mc oscillator is shifted to 9.001. Do you have any idea how this works? Maybe there's an old part that's out of spec that I can replace.

Thanks for any tips you might have!
Tom Taylor aa6br

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: mallick@orion.crd.ge.com (John Mallick)
Subject: Re: Need Drake TR-3 Advice
Message-ID: <9510201344.AA01680@orion.crd.ge.com>

The audio "crackle" might be a cathode resistor bypass capacitor
that's bad or leaky. It might even be a bad tube. Did you try
tapping the audio tubes a bit just to see if they're noisy?

73, John WA1HNL

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: mirage!pamars@uhura.neoucom.EDU (P.A.Marshall)
Subject: Re: need tool recommendation
Message-ID: <9510201145.AA14539@mirage>

ROBERT W DOWNS, WA5CAB writes:
>
> My experience is that switches and jacks with the serrated nuts that you
> describe also have a thin pattern hex nut which would be behind the panel.
> This would be tightened with an open-end wrench after the serrated nut had
> been adjusted with the fingers for proper depth of the switch or jack.
Very true, esp. on equipment with 'sub-panel' type construction.

> If you know for a fact that such wrenches were in fact produced, let me know.
> My present assumption is that they weren't.
Saw them in use in the 70s, as I remember everyone called them 'dress-nut'
wrenches, but in construction I would say they were realy a collet, though
there was also a 'spanner' type for the nut w/o serrations, they had two
slots cut into the sholder of the nut. When I was pestering the componets
lab switch man, he did come up with one discription, part number, etc. but
alas for a company that had gone under or snapped up by someone, he knew
what I was asking about, but said they had not been used in years. We have
to remember that in the 70s this type of switch was not what was commonly
used in new designs, minature switches as I remember always used hex nuts,
PC mounts w/o panel support were making big in roads, etc.

Al Marshall   "Real Radios Glow in the Dark"   almarshall@acm.org

As nightfall does not come at once, neither does oppression. In both
instances, there is a twilight when everything remains seemingly unchanged.
And it is in such twilight that we all must be most aware of change in the
air--however slight--lest we become unwitting victims of the darkness.
                            Justice William O. Douglas

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "rohre" <rohre@arlut.utexas.edu>
Subject: Noise reduction units
Message-ID: <n1397934702.53792@msmailgw1.arlut.utexas.edu>

someone asked about noise blanking.

On one list I have seen a glowing user report on the Timewave DSP-9, I believe it was.

Does anyone know if the Collins type noise receiver/ blanker circuit ever saw a clone in the general ham magazines like QST, and 73? That is the one from the KWM days that received the noise at something like 40 M Hz where it supposedly peaked before lower frequencies, and that was detected and used to gate a fast squelch of the receiver at the frequency you were tuned to, if I remember the principal of it.

73, Stuart
K5KVH
rohre@arlut.utexas.edu

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: berg stephen erik <z931086@oats.farm.niu.edu>
Subject: Re: Noise reduction units
Message-ID: <Pine.SOL.3.91.951020113506.27286B-100000@oats>

This principle of using a higher frequency receiver to blank a lower frequency one is also used in the older Motorola FM radios. They called it an "extender", and included it on many of the low band and a few of the high band VHF Motrac radios.

73,

Steve WA9JML

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: w0ogh@ix.netcom.com (Larry Godek)
Subject: OS-8E scope
Message-ID: <199510202110.OAA26770@ix10.ix.netcom.com>

Did I place a request for info on the OS-8E scope? If not then I shall

do so.

I got one free gratis and its pretty clean. Has some display problems
(like horizontal pos for one) and I would like to make it work better.
Anyone with a schematic or manual for it?

Thanks

Larry W0OGH@ix.netcom.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: hawley@aries.scs.uiuc.edu (Chuck Hawley)
Subject: Re: Power line noise; Help!
Message-ID: <199510201526.KAA04665@aries.scs.uiuc.edu>

> Or.. Can someone suggest a good outboard add on noise blanker, that I may be
> able to build/buy for the BA units?
> Thanks
> Roger KD6CC

The JPS ANC-4 works very well.

Chuck KE9UW

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: MODSTEPH@ACS.EKU.EDU
Subject: Re: Power line noise; Help!
Message-ID: <01HWNUFG1FUU002BWT@ACS.EKU.EDU>

Anothr approach to reducing power line noise can be found in the
September, 1995, QST - a good article on antenna construction designed
to do just that.73, Al N5AIT

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "Sean McCarthy" <wx8l@vtc.tacom.army.mil>
Subject: R-392 (and T-195) questions
Message-ID: <199510200305.XAA15770@VTC.TACOM.Army.Mil>

I now regret not following the R-392 thread as I have just aquired one this evening. (Along with a T-195) If anyone has the thread saved I wouldn't mine a copy.

Anyhow, all the pictures I've seen of the 392 show it with "wing" like knobs, mine has round plastic knobs. This looks good, but I'm wondering if they are correct. The unit is a Stromberg-Carlson, order no. 11653 PHILA 52

I think I'll order a LS-166 for it from fair, and possibly the M-29 mic, this should cover the audio connectors... comments?

Also, not having the manuals (I'm told their on the way) can anyone tell me the cable number to interconnect the transmitter to the reciever, and also the T-195 power cable?

Last, where might I find the plugs or cables, Fair has the mic and the speaker, but seems clueless on the power/interconnect plugs and cables.

Thanks,

Sean McCarthy, WX8L
2224 Marlow, Warren MI 48092 (810)573-9277
wx8l@vtc.tacom.army.mil

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: bill@texan.frco.com (William Hawkins)
Subject: Re: R-392 (and T-195) questions
Message-ID: <9510200605.AA08285@texan.frco.com>

Just a note - I sent Sean a 45 KB file of the r392 thread starting in mid September.

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: dmedley@indirect.com (David Medley)
Subject: Spare tubes for SX-28
Message-ID: <199510210009.RAA13151@ns2.indirect.com>

I have made up several sets of spare tubes for the SX-28 radio. These are:
6AB7(2),6SK7(2),6SA7(2),6B8(2),6H6,6J5,6C8G,6V6GT(2),5Z3,6L7

These are mostly boxed and all tested.
$35.00 including S&H

Dave Medley

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: thaake@bsm2ee1.attmail.com (thaake)
Subject: RE:Special Tool
Message-ID: <PMX-TERM-2.02-bsm2ee1-thaake-269>

RE: Serrated Wrench Discussion

Jensen had at one time a set of 3 "panel control wrenches" which I have a couple sets of. They are for the nut on the backside of the panel. They are made of thin steel and bent in a way to help with clearance. I have always used them to tighten down the control once the serrated nut was screwed on from the outside. I screw on the serrated nut with maybe a single thread or less showing and back down the hex nut on the inside with the control wrench.

Would be nice to have the serrated wrench for the nut though just like it would be nice to have the special screwdriver for the 310, P-068, etc. plugs but I guess they will all remain hidden somewhere.

Tim WA0TSY
thaake@bsm2ee1.attmail.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: Stainless & chlorides - more info
Message-ID: <9510202148.AA25531@syseng1.se.melpar.esys.com>

Here's some more info from Eshbach regarding metals and corrosion:

From Table 12, "Corrosion Ratings of Commercial Alloys of Iron, Nickel, and Chromium:"

AISI 316 Stainless Steel is rated:

A+ for marine atmospheres (highest possible rating)

B for Chlorine (same rating as Nickel, Monel, and Inconel,

nothing else rated higher)

C for Hydrogen Chloride (only Monel and Inconel rated higher, at B)

The ratings scale is:

A Practically complete resistance...

B Good resistance, as proved by being in common use.

C Adequate resistance under favorable conditions, which should be investigated beforehand.

73,

Paul, K4MSG

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: Stainless Steel and chlorides
Message-ID: <9510202117.AA25382@syseng1.se.melpar.esys.com>

>To comment specifically on Bill's question about stainless steel and
>salt - don't do this. Stainless steel is not very resistant to chlorides
>and will be corroded badly.

In the absence of amplifying information, I disagree with this statement. Example: In the industrial plant I worked in during the '70s, we used a high performance bleach pump made of stainless steel and using Teflon bushings (sorry, don't remember which grade of SS it was). While the bushings wore out periodically, requiring replacement, the shaft and impeller *NEVER* corroded despite the use of very high concentration, near-pure chlorine bleach.

Other examples:

(From "Handbook of Engineering Fundamentals," Eshbach, Tables 17, 18 & 19, pp. 1354-1356, "Compositions, Characteristics, and Uses of {Ferric}{Martensitic} {Austenitic} Stainless Steels")

AISI 430 "Superior corrosion resistance.....chemical equipment."

AISI 431 "Best corrosion resistance of martensitic types.
Marine applications..."

AISI 316 "Superior corrosion resistance to sea water and
many chemicals....."

AISI 317 "Better properties than Type 316..."

73,

Paul, K4MSG

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: jschwart@ix.netcom.com (John Schwartzberg)
Subject: Re: Stainless Steel and chlorides
Message-ID: <199510202220.PAA10627@ix7.ix.netcom.com>

> In the absence of amplifying information, I disagree with
>this statement.

Amplifying information follows. This is definately not a BA subject, but one about which I know a bit, so I'll toss some thoughts out as a consulting emtallurgical engineer, and hope this either dies soon or continues as e-mail between the interested parties.

Stainless steels are stainless because of the nickel and chromium content in the alloy. These elements do several things metallurgically, not the least of which is to create a passive oxide layer at the surface of the alloy. Pitting corrosion is the most common mechanism for austenitic stainless steels (316, 317, 304, 3xxx, etc.) Chloride ions are extremely corrosive to 3xx series stainless steels because they penetrate the oxide layer. In fact, moderately concentrated chlorine solutions can be far more corrosive under some circumstances that concentrated acids.

>Example: In the industrial plant I worked in
>during the '70s, we used a high performance bleach pump made of
>stainless steel and using Teflon bushings (sorry, don't remember
>which grade of SS it was). While the bushings wore out
>periodically, requiring replacement, the shaft and impeller
>*NEVER* corroded despite the use of very high concentration,
>near-pure chlorine bleach.
>

In summary, although there are details and exceptions, Bill's comments are

very appropriate and pretty much accurate. This is also why one of the standard corrosion resistance tests involves a salt spray exposure.

OK....back to the fun stuff.....

John
N0GII
Metallurgical Engineer

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: dmedley@indirect.com (David Medley)
Subject: Still more tubes FS
Message-ID: <199510210222.TAA08471@bob.indirect.com>

I did not realise how many tubes there were here. I keep finding more. Anyway here is another box of them. Please note the 14 6D6 are definitely NIB. All the others are boxed but they are priced as used but good. Here is the inventory:
OZ4(2),OD3,G55,1A5G,1A7GT(4),1B3,1B59,1E7,1N2,1H5GT(6),1H6G,1LA6,1LB4,1LN5,1N5GT(6),1T5GT(4),2AS15A,2E24(2),2X2(2),34,39(2),46,3Q5GT,55S,6A6(2),6AC7(5),6AG7(4),6AU4(2),6AX5,6BQ6G(2),6B6G,6BL7(2),6C8G(3),6D6(14),6DQ6(2),6EM7(2),6F8(2),6G6G(4),6J5,6J7(6),6H6,6K6G(2),6K7(5),6K8,6Q7G(2),6R7,6SC7G,6SB7Y,6SQ7,6SD7GT(5),6SL7,6SN7,6Y6GT,6W7G,6Z5(2),6ZY5G,12J5GT(2),12SL7,12SN7GT(4),12SQ7,12Z3(2),12V6,7C5,7H7,7S7,77,78(2),89(2)
$100.00 inc shipping and packing OBO.
Replies dmedley@indirect.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: "Barry L. Ornitz" <u856010@eastman.com>
Subject: Transformer Questions
Message-ID: <Pine.ULT.3.91.951019190157.13346A-100000@dua150.kpt.emn.com>

Richard Loken asked about using 1950's vintage TV transformer and chokes...

I have scrapped many a TV in my day, but I cannot remember the places the two chokes were used in the old TV's. The smaller one, if I remember correctly, is fairly high inductance but very low current with considerable internal resistance. If you are trying to use the transformer to power a transmitter, I would use the bigger choke alone.

To a first approximation (actually pretty good) a transformer is a constant power device. The actual power rating is dependent on core size.

Old handbooks used to give a graph of transformer watts versus cross sectional area of the center leg of the E-laminations. If you do not use the filament windings, their voltage * current (= watts) can be added to the voltage * current of the high voltage winding.

The following analysis ignores winding resistance effects but this is a resonable approximation.

For example consider the following transformer where you know the original ratings:

```
Pri:   110 VAC
Sec1:  500-0-500 VAC, 0.15 amp       150 watts
Sec2:  5.0 VAC, 4 amp             20 watts
Sec3:  6.3 VAC, 7 amp             44 watts
```

Allow maybe 6 watts of additional losses and the primary power will be 220 watts. At 110 VAC, this is 2 amps input current. The transformer is rated for 220 watts continuous duty.

Now consider not using the filament windings and running the primary on today's more common 120 VAC.

```
Pri:  120 VAC
Sec1: 545.5-0-545.5 VAC         215 watts (slightly more
Sec2: not used                             efficient with
Sec3: not used                          higher voltage)
```

The transformer is still rated for 220 watts so the primary must now draw 1.83 amps. The current that can be drawn from the high voltage winding is 215 watts/1091 volts = 0.197 amps or approximately 200 milliamps.

Remember that the transformer was originally rated for CCS (continuous commercial service) operation [I watched Pinky Lee and Howdy Doody faithfully so our set gots lots of use]. If you are using the transformer in a transmitter for amateur use, the ratings can be pushed quite a bit (ICAS). Unless you are long winded on AM or a slow typist on RTTY, you should be able to push the transformer ratings 30 to 50% (or more). For this transformer, I would not hesitate to intermittently draw 300 milliamps from the HV winding with a choke input filter. With a capacitor input filter I would compromise and stay below 250 milliamps when not using the filament windings.

If you do not know the original transformer ratings, consult the graph in the ARRL Handbooks. But remember, the graph already takes into account ICAS (intermittent commercial and amateur service) ratings so don't push these figures unless you expect extremely light duty.

When testing an unknown transformer, I use an ohmmeter to determine the probable primary winding. [Remember the L*dI/dt effect: that ohmmeter current can give a nasty shock when the leads are disconnected!] I then use a filament transformer to power the primary winding - a low voltage is preferable from a safety standpoint. Now measure the voltage of the other windings. Determine the actual voltage from the ratios.

For example on the above transformer, the filament windings will be a very low resistance. The primary may be around 50 to 100 ohms and the high voltage secondary may be as high as a few hundred ohms. This information should give you good reason the guess the primary.

Hooking up 2.5 volts from a filament transformer to the primary might give you the following voltages on the secondaries:

```
Sec1:  12.8-0-12.8 VAC
Sec2:  0.13 VAC
Sec3:  0.16 VAC
```

But before you go merrily on your way, you decide to measure the primary voltage and you get 2.8 volts. This is not uncommon as the filament transformer is lightly loaded. You can expect its voltage to be slightly high.

Assuming the transformer were to run on 120 volts, the predicted secondary voltages would be:

```
Sec1:  12.8 VAC * 120 VAC/2.8 VAC = 548.5 VAC
Sec2:  0.13 VAC * 120 VAC/2.8 VAC = 5.5 VAC
Sec3:  0.16 VAC * 120 VAC/2.8 VAC = 6.8 VAC
```

The slight differences are due to the fact that your AC voltmeter was probably not very accurate on its lowest voltage scale. Also these are the unloaded secondary voltages. Under load expect them to drop slightly.

The final test of whether the transformer is overloaded or not is really done thermally. If the transformer gets too hot to touch - you are at risk, both for destroying the transformer and for possibly setting the hamshack on fire too. [Remember the warnings about always keeping a BC type extinguisher handy.]

Old transformers are at risk of having absorbed considerable moisture over the years. Some here have suggested baking them at 140 to 150 degrees F (60 to 65 C) for a few hours. My normally understanding and patient wife Lana quit baking cakes for several weeks after I last did this. Besides, a few hours is hardly enough drying time. I now hook the primary of the transformer in series with a 50 to 100 watt light bulb and connect this to the power line. Insulate all the windings and connections. Let the

transformer heat like this for one to two weeks in the garage. The lamp will limit the current in the event the transformer shorts internally. I have found this works well [and besides my wife is a good cook and who am I to pass up scratch cakes?]. To aid in the drying process, I commonly remove the transformer end bells during this period. I often also replace the lead wires coming out of the transformer at this time. To maintain an authentic look, spaghetti tubing or cambric may be placed over the new wires where they exit the bells.

Well I see I have gone and gotten long-winded (or over-digited) again. I hope the old timers were not bored with this basic stuff, but I really want to encourage the "youngsters" out there to also consider the time-honored tradition of hombrew design and construction. Old tube TV's are getting mighty hard to find, but there are other sources for transformers if you are willing to scrounge around. Like Hank, I believe in "blue collar" boatanchors. Unless you have a museum quality radio, consider improvising when you need a replacement part. You will get a better education that way and you are keeping alive a ham tradition. Some day you might even "wind yer own"!

73, Barry WA4VZQ ornitz@eastman.com

{Due to a mailer bug likely to never be fixed, reply to this address rather than to whatever the header information might say!}

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: Steven Wilson <randyw@crl.com>
Subject: Wanted Book: Pozar's "Antenna Design Using Personal Computers"
Message-ID: <Pine.SUN.3.91.951020113347.17381A-100000@crl14.crl.com>

Looking for a copy of David Pozar, "Antenna Design Using Personal COmputers", Artech House, Inc. 1985

Thanks de stan ak0b
e-mail via randyw@crl.com

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: johnmb@nando.net
Subject: Wanted: Twoer
Message-ID: <9510192306.AA11140@merlin.nando.net>

Looking for a complete, and maybe even working,
Heath twoer...
Thanks!

/john

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: "Barry L. Ornitz" <u856010@eastman.com>
Subject: Water Dummy Loads
Message-ID: <Pine.ULT.3.91.951020154254.20949A-100000@dua150.kpt.emn.com>

Hi Bill and group.

I once built a conductive dummy load as per an article in QST in '65 or '66. A number of salts were discussed and tested using a "standard" electrode configuration. My load was fairly frequency dependent over the HF range of 80 through 10 meters but this was discussed in the article. My load radiated a little bit and I boiled the water once or twice too. SWR was also a strong function of temperature.

Knowing what I do now about dielectrics and ion conductivity, I can see why my load was frequency and temperature dependent. Below a megahertz or so, the ion mobility of good electrolytes is adequate to provide true ionic conduction. As the frequency is increased, ion mobility becomes less important and the imaginary term of the dielectric permitivity begins to dominate. (This is the loss factor or dissipation constant effect seen in capacitors. In the HF region, dielectric losses generally increase with increasing frequency. This is why at RF mica dielectrics are better than Mylar or even most ceramics.) Over the 80 to 10 meter bands, there is still some ion mobility left causing a large change in conductance with frequency. Ion mobility and dielectric properties are both strong functions of temperature in most materials.

In the microwave bands, pure water is a pretty lossy material by itself. (Above 7 to 10 GHz, the dielectric constant of water begins to drop off and the dissipation factor increases. The effect is commonly referred to as relaxation phenomena.) Water filled waveguide makes a pretty good dummy load at microwave frequencies. It is common to tilt the waveguide slightly. The water surface then forms a tapered impedance matching section from the air filled to the water filled section. For high power, flowing water is used. This is generally done by using either a glass or teflon tube to contain the water. This tube is run diagonally across the waveguide in the axis of the E-plane. Once again, the taper effect is used for impedance matching. Water filled coaxial sections are also possible but for a wider bandwidth, the inner conductor should taper over its length.

[And before anyone comments about microwave ovens and water, let me state absolutely that conventional microwave ovens, both commercial and home models, DO NOT OPERATE AT THE RESONANT FREQUENCY OF WATER. Furthermore,

water is one among MANY materials that heat in a microwave oven.]

In the VHF and especially the UHF range, one of the best dummy loads is genuine boatanchor-grade, WWII surplus coax cable. The older coax cables were pretty lossy to begin with and with age their loss increases greatly (mainly due to their contaminating vinyl jackets). A few hundred feet of old coax works just fine as a VHF/UHF dummy load. Measure the input SWR while shorting or disconnecting the other end of the cable. You will likely never see the difference. Even new coax cable can show considerable loss over a few hundred feet in the UHF region. For all I know, Fair Radio may still be selling WWII RG-55/U cable with a clear jacket and tremendous losses!

At HF, I commonly used the old boatanchor standby dummy load - a light bulb. With a good Pi-network or adjustable link output, it was no trouble to match the bulb impedances. I remember once burning out a giant mogul base 750 watt bulb when testing a homebrew amplifier (813's). Besides absorbing the RF, bulbs had the advantage of being able to see increased output as a brightness increase. (For those into homebrewing small transmitters, a #44 or #47 lamp in the cathode of the final makes a cheap replacement for a meter (tune for a dip in brightness here, not maximum). They also provide a little negative feedback and act as a fuse.)

To comment specifically on Bill's question about stainless steel and salt - don't do this. Stainless steel is not very resistant to chlorides and will be corroded badly.

73, Barry WA4VZQ ornitz@eastman.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: bill@texan.frco.com (William Hawkins)
Subject: Re: Water Dummy Loads
Message-ID: <9510202131.AA08717@texan.frco.com>

Well, I thought there might be a reason why that scheme wasn't popular. Changing ion mobility with frequency is not useful. Looks like a 50 KW dummy load will have to be resistance elements cooled by circulating oil.

>To comment specifically on Bill's question about stainless steel and
>salt - don't do this. Stainless steel is not very resistant to chlorides
>and will be corroded badly.

Actually, the stainless was for a stronger electrolyte, like sulfuric acid.

Thanks for the facts, Barry.

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Fri Oct 20 16:28:00 1995
From: David Stinson <72227.1640@compuserve.com>
Subject: WHEW! What a response!
Message-ID: <951020084306_72227.1640_EHM52-6@CompuServe.COM>

Man, I wish I could get a response like that when I'm
looking for Command sets!

On the TEX stuff... it's a couple of older-model module extender cards
(the kind that are a blue, rectangular box with the "Blue Ribbon"
connectors on each end... model 13-055 I think), a couple of sets
of the in-line probe attenuators (three values), cooling fan filters,
a new probe set, some probe pieces-parts, some hardware kits
for mounting the scopes, some newer covers and a bunch of
newer manuals. Sorry guys; no tubes. I'll make a list.

On the HN and GR connectors....
I have dozens and dozens of adaptors.... GR to BNC male and female,
GR to N, GR to binding post, GR to HN, GR feedthrus, GR three-way
splitters and everything you can imagine. The assortment in HN is similar.
These things cost a fortune retail and I was surprised to find them in
this dusty old box! I'll make a list of them also.

Ya'll know what I'm interested in for trades.
I'll send the list next week to everyone who wrote.

73 DE AB5S7
Dave Stinson
72227.1640@compuserve.com

From boatanchors@theporch.com Sat Oct 21 02:30:00 1995
From: michaelk@kentrox.com (Michael Kersenbrock)
Subject: Re: WHEW! What a response!
Message-ID: <9510201710.AA00913@kentrox.com>

> On the HN and GR connectors....
> I have dozens and dozens of adaptors.... GR to BNC male and female,
> GR to N, GR to binding post, GR to HN, GR feedthrus, GR three-way
> splitters and everything you can imagine. The assortment in HN is similar.
> These things cost a fortune retail and I was surprised to find them in
> this dusty old box! I'll make a list of them also.

And if he doesn't have the converter/terminator that you want, send
me some email, I've *hundreds* of those things. And I even know where

they are (I've "tons 'o stuff" including a number of 5xx scopes and plug-ins (I use
a 7K dual beam "B-phase" scope myself) but I'm not quite sure where things are). I
need to clean my garage. Two car garage that's full and no cars in it. No, the
connectors don't take up much space. :-)

I need to find one of those circular/round "tuits".

Mike